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**Chien**

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(54) **LEVER-TYPE MOP AND BUCKET FOR THE SAME**

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(30) **Foreign Application Priority Data**

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**ABSTRACT**

(57) A lever-type mop has a base, a cleaning unit, a connecting seat and a rod. The cleaning unit is attached on the bottom of the base. The rod is connected pivotally to the base through the connecting seat. The base has notches and the rod has a corresponding limiting protrusion. A bucket operated in coordination with the lever-type mop has an inclined surface and a straining board mounted under the inclined surface. When straining the cleaning unit, the base and the cleaning unit are put on the straining board and the rod is pivoted downward. With the abutting forces from the limiting protrusion and the inclined surface on opposite sides, the cleaning unit is squeezed. Therefore, the mop and the bucket have simple structures to achieve the purpose of squeezing the cleaning unit without touching the cleaning unit directly by the user's hand.

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*A47L 13/20* (2006.01)  
*A47L 13/50* (2006.01)

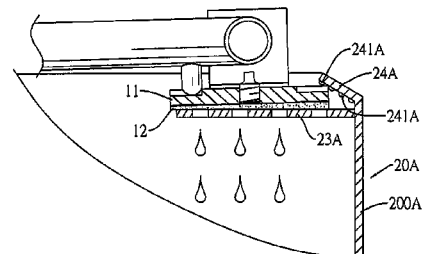
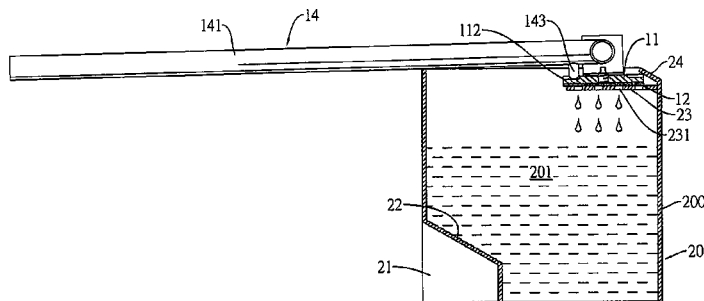
(52) **U.S. Cl.**

CPC ..... *A47L 13/20* (2013.01); *A47L 13/50* (2013.01); *A47L 13/58* (2013.01)

(58) **Field of Classification Search**

CPC ..... *A47L 13/50*; *A47L 13/58–13/60*  
USPC ..... 15/104.92, 142, 260–264  
See application file for complete search history.

**9 Claims, 10 Drawing Sheets**



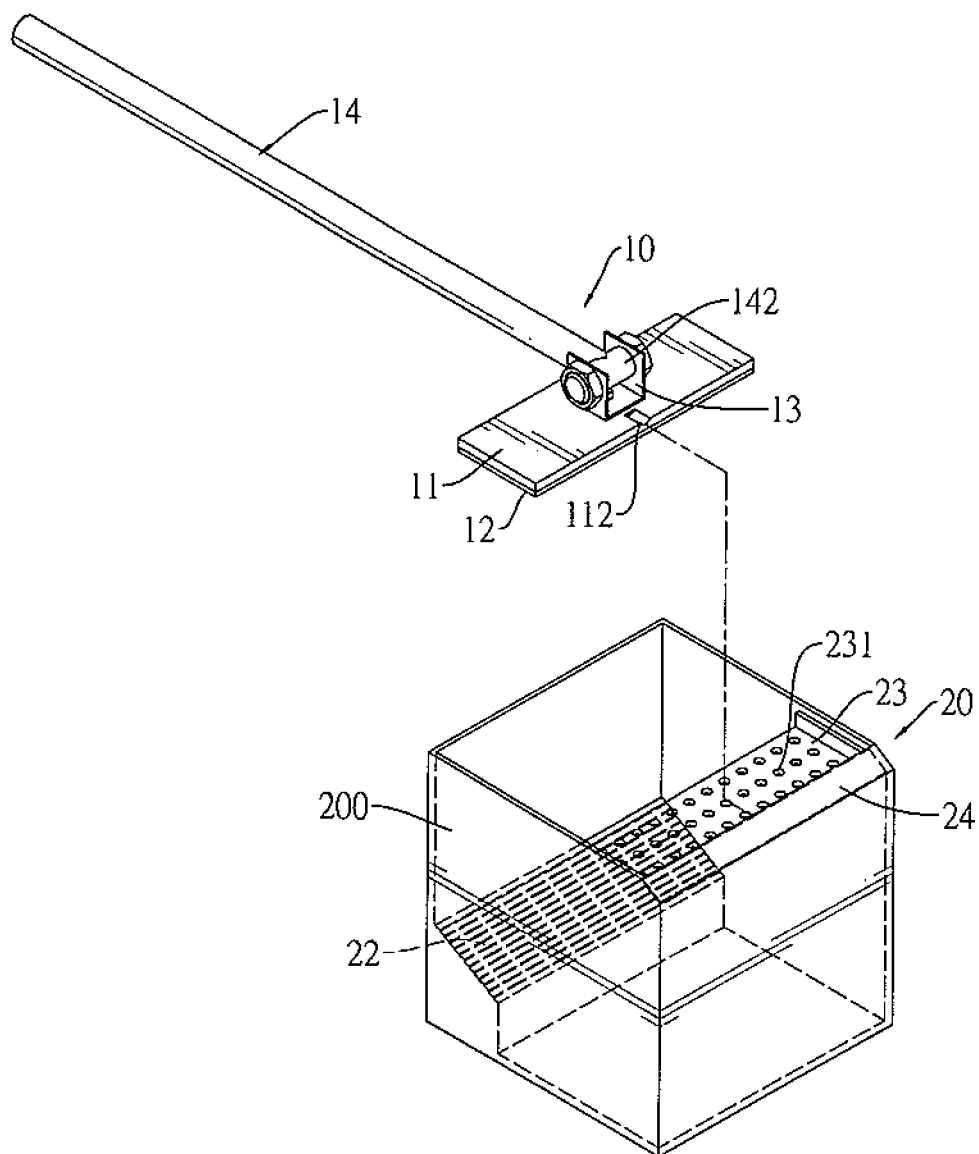


FIG.1

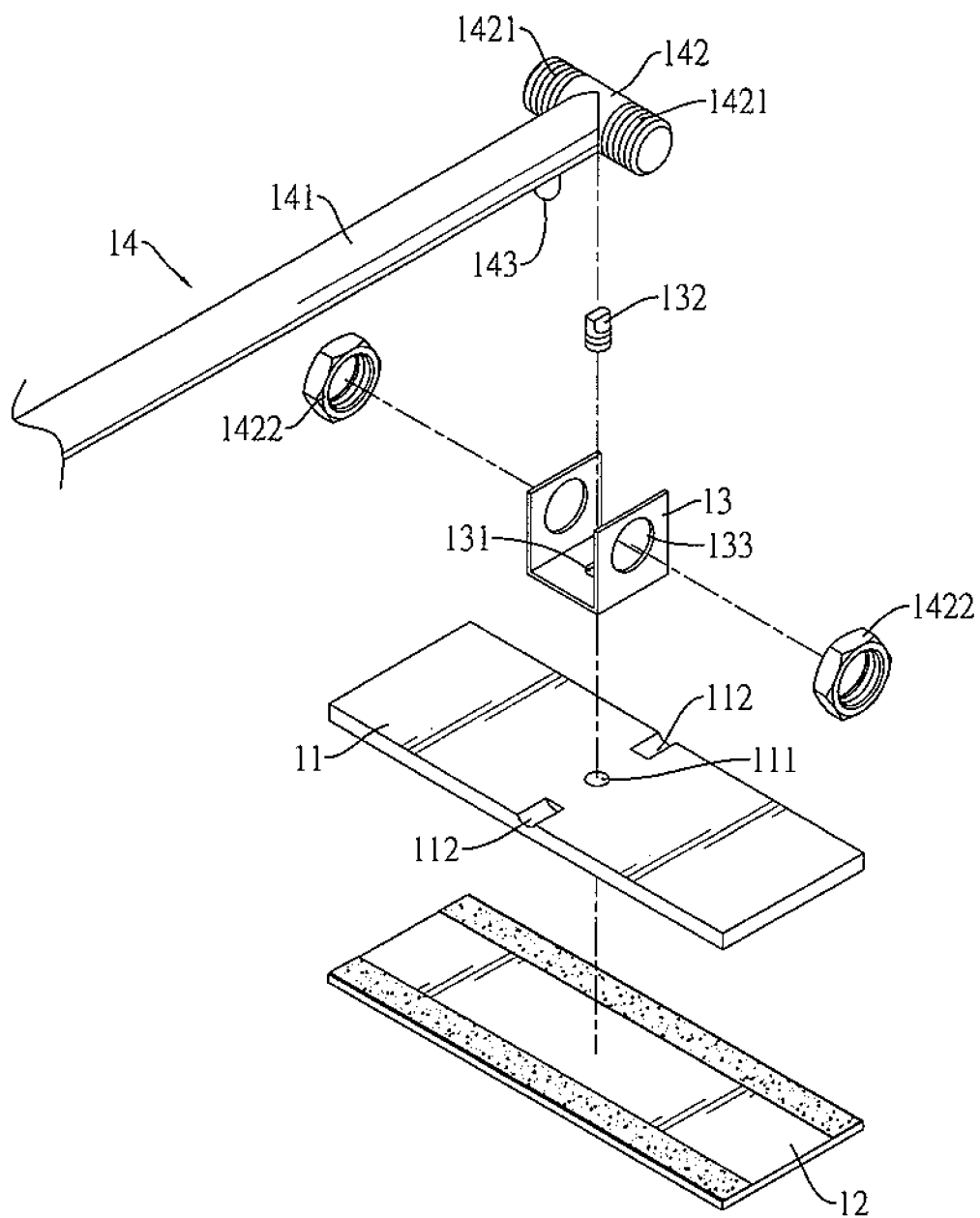


FIG.2

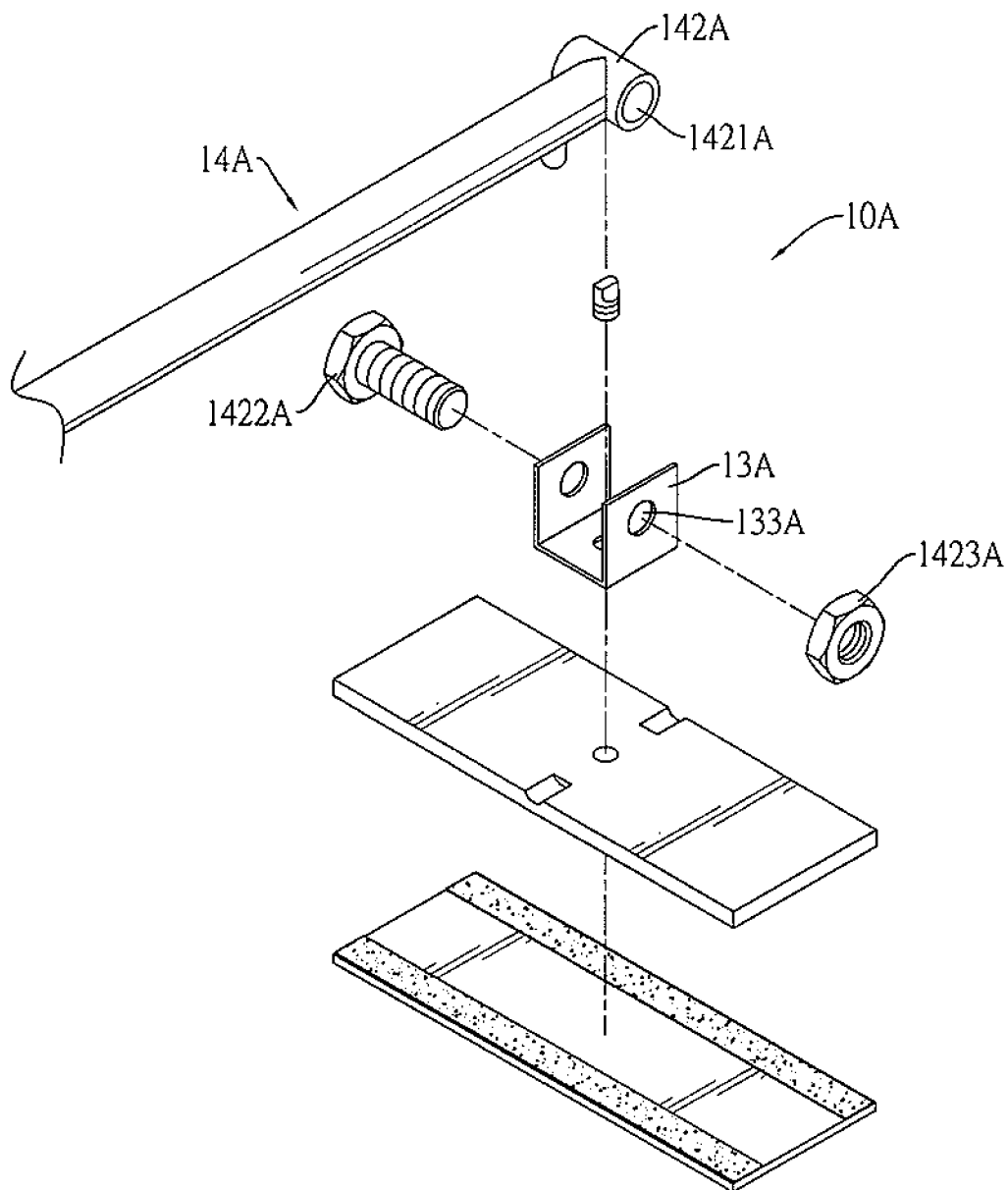


FIG.3

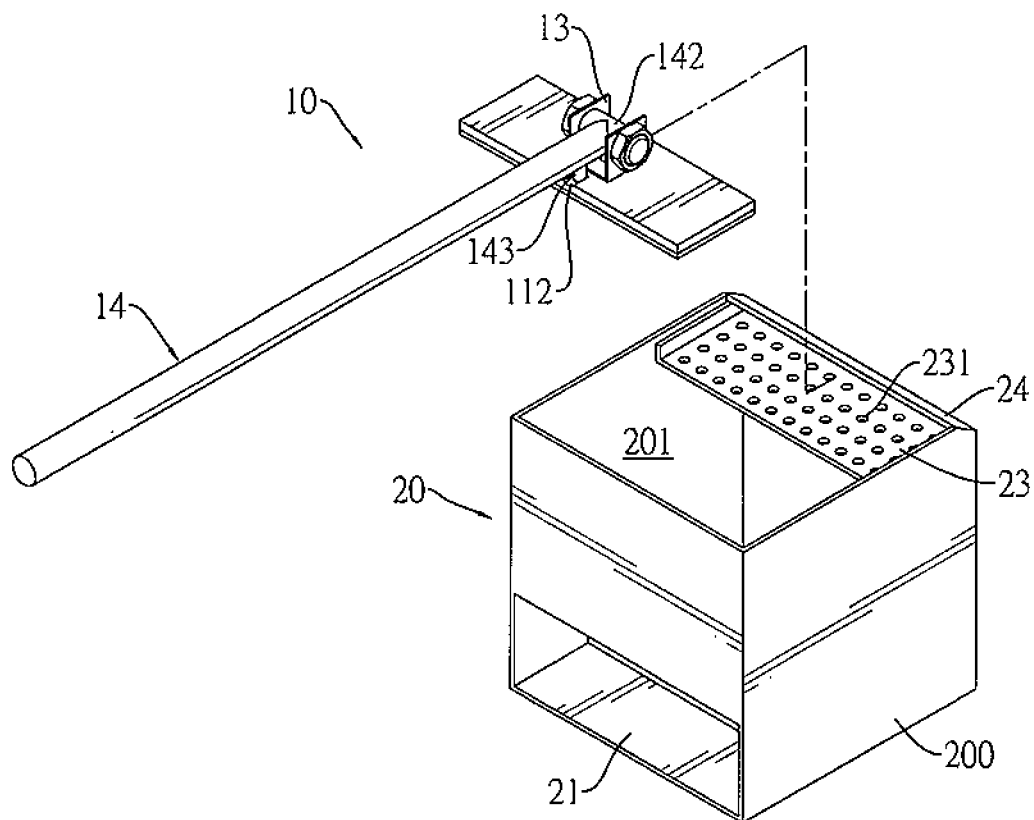


FIG.4

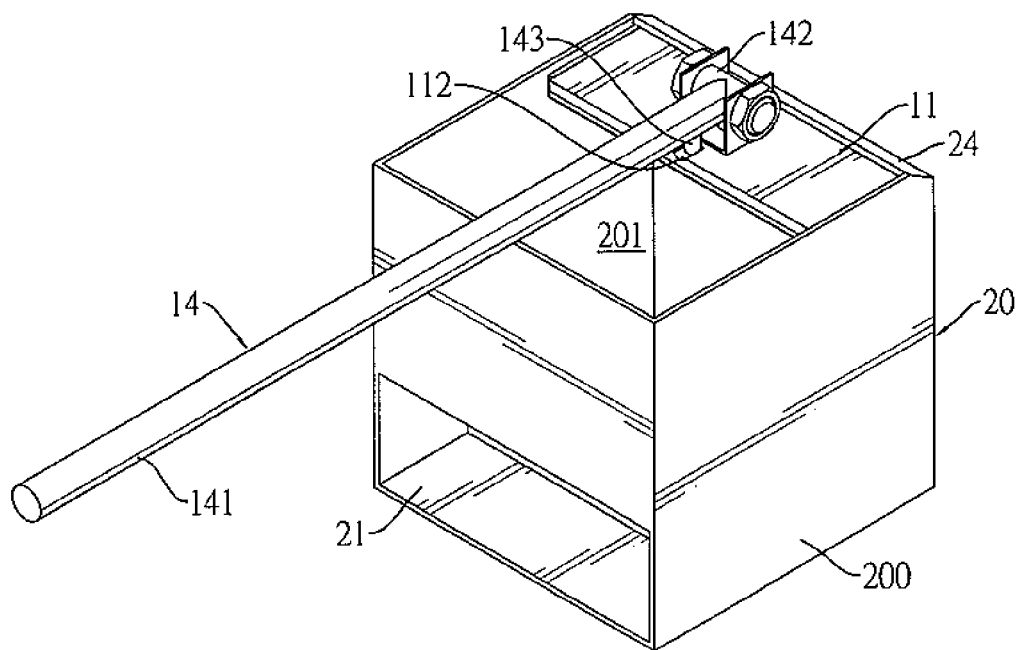


FIG.5

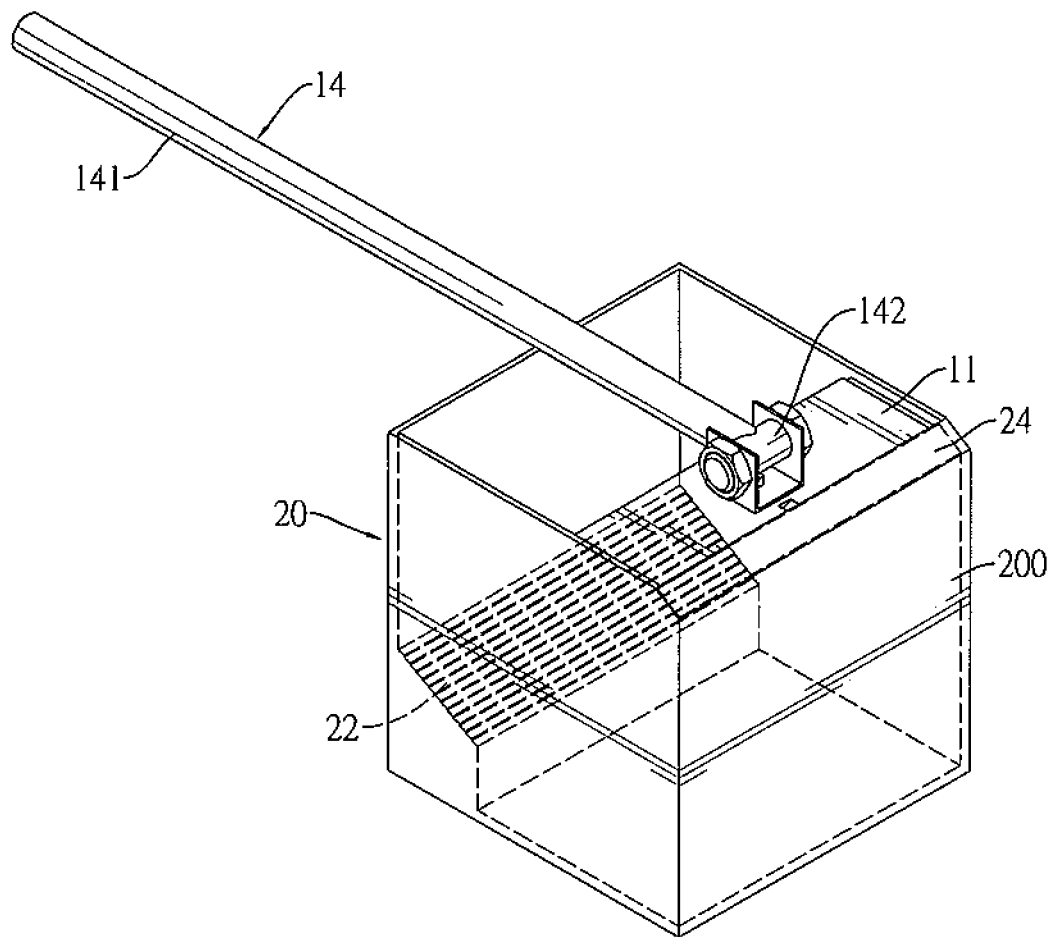


FIG.6

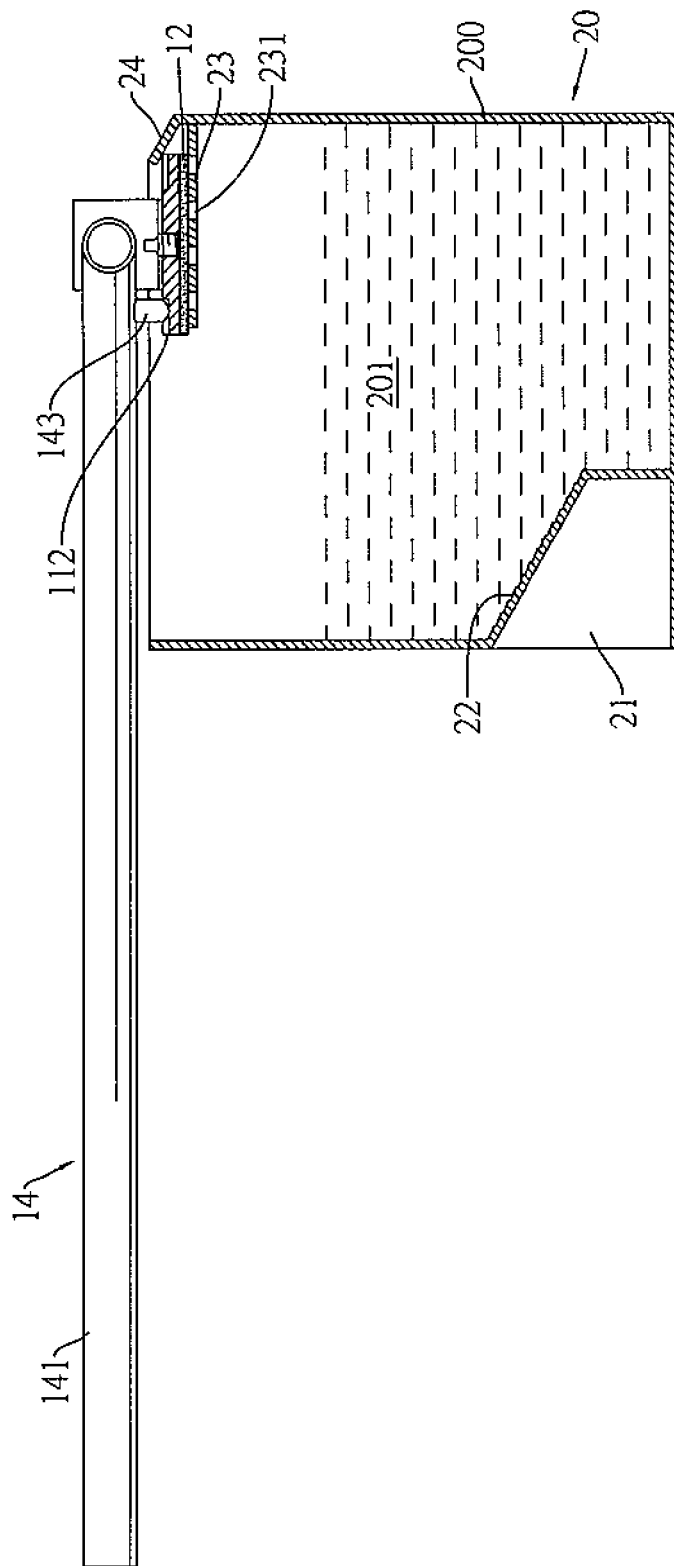


FIG. 7



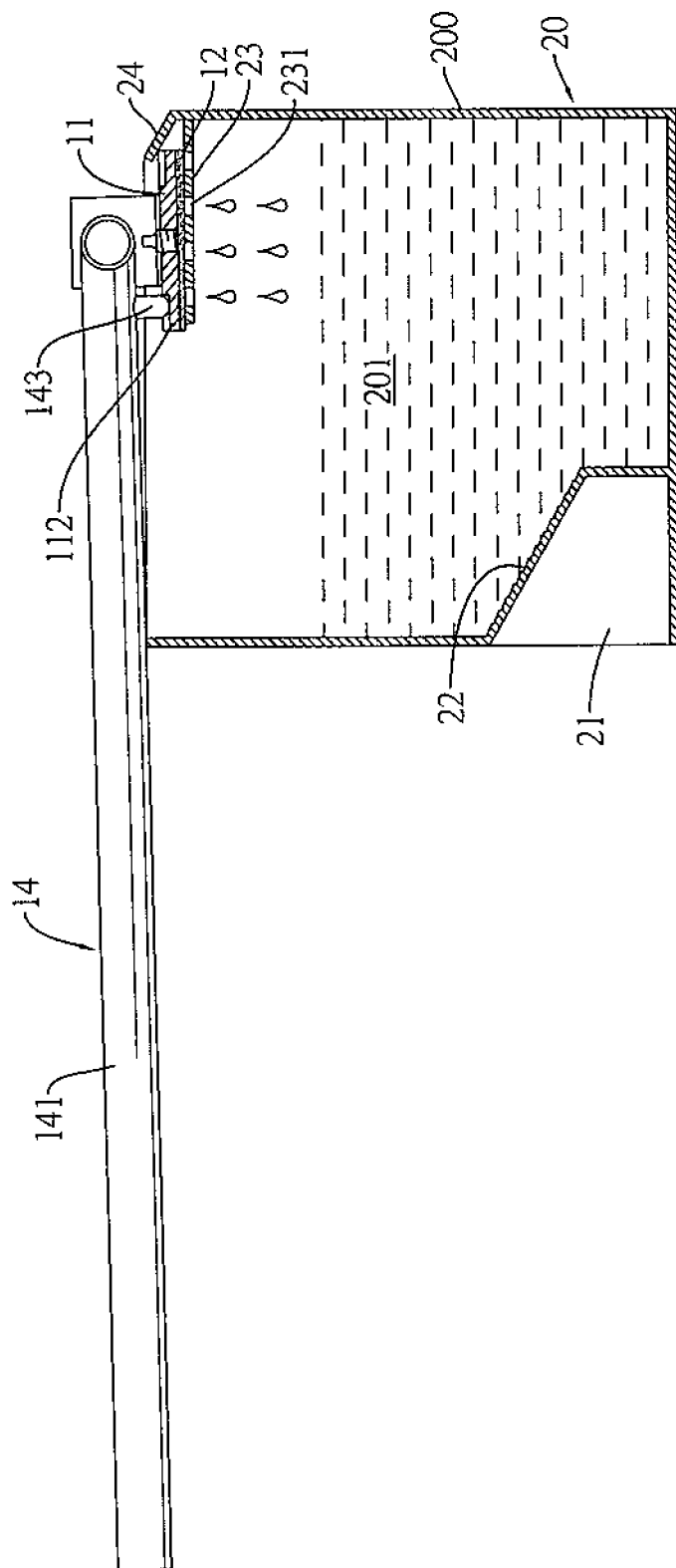


FIG. 8

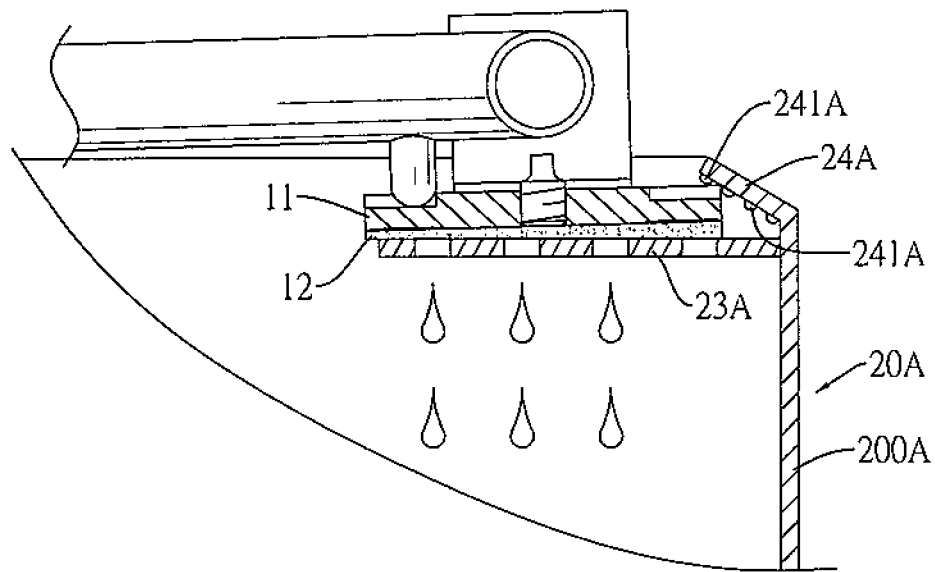


FIG.9

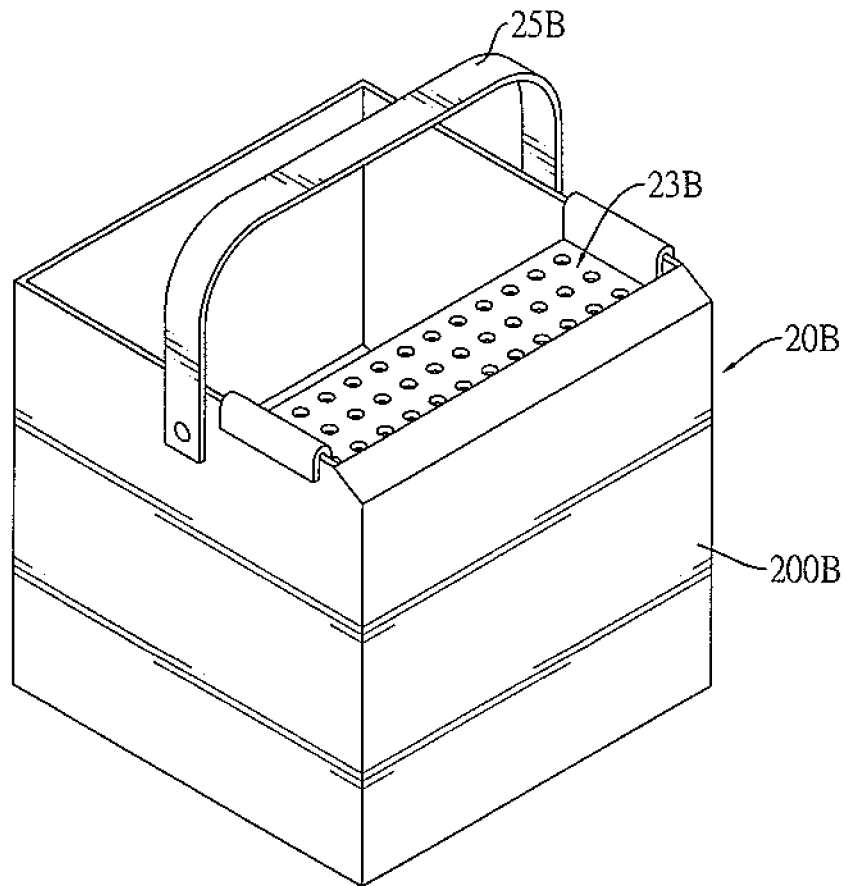


FIG.10

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# LEVER-TYPE MOP AND BUCKET FOR THE SAME

## CROSS-REFERENCE TO RELATED APPLICATIONS

This application is based upon and claims priority under 35 U.S.C. 119 from Taiwan Patent Application No. 102117854 filed on May 21, 2013, which is hereby specifically incorporated herein by this reference thereto.

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to a lever-type mop and a bucket for the same, especially to a lever-type mop for cleaning and to a bucket that is cooperated with the lever-type mop.

### 2. Description of the Prior Arts

Mops are widely used for cleaning. Generally, the mops are used with buckets. Water is contained in the bucket such that the user can wash the mop nearby in the bucket to remove surplus water within the mop, so the mop can be used for cleaning again. In the past, the user had to manually squeeze the mop to get rid of the surplus water. However, squeezing the mop directly by hands easily harms the user's health because the mop and the surplus water are usually dirty.

Thus, some conventional mops and conventional buckets are invented to get rid of the surplus water by rotating the mop at high speed. However, those conventional mops and the conventional buckets have complicated gears or screw rods to implement the high speed rotation such that the conventional mops and the conventional buckets are not only expensive but also easily damaged because of the high speed rotation.

To overcome the shortcomings, the present invention provides a lever-type mop and a bucket for the same to mitigate or obviate the aforementioned problems.

## SUMMARY OF THE INVENTION

The main objective of the present invention is to provide a lever-type mop and its bucket with simple structures. The lever-type mop has a base, a cleaning unit, a connecting seat and a rod. The cleaning unit is attached on the bottom surface of the base. The rod is connected pivotally to the base through the connecting seat. The base has notches and the rod has a corresponding limiting protrusion. The bucket has an inclined surface and a straining board mounted under the inclined surface. When straining the cleaning unit, the base and the cleaning unit are put on the straining board and the rod is pivoted downward. With the abutting forces from the limiting protrusion and the inclined surface on opposite sides, the cleaning unit is squeezed. Therefore, the mop and the bucket have simple structures to achieve the purpose of squeezing the cleaning unit without touching the cleaning unit by the user's hand.

Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of a mop and a bucket in accordance with the present invention;

FIG. 2 is another exploded perspective view of the mop and the bucket in FIG. 1;

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FIG. 3 is an enlarged exploded perspective view of the mop in FIG. 1;

FIG. 4 is an enlarged exploded perspective view of another embodiment of a mop in accordance with the present invention;

FIG. 5 is an operational perspective view of the mop and the bucket in FIG. 1;

FIG. 6 is another operational perspective view of the mop and the bucket in FIG. 1;

FIG. 7 is an operational side view in partial section of the mop and the bucket in FIG. 1;

FIG. 8 is another operational side view in partial section of the mop and the bucket in FIG. 1, showing the mop being pressed downward;

FIG. 9 is an enlarged side view in partial section of another embodiment of a bucket in accordance with the present invention; and

FIG. 10 is a perspective view of still another embodiment of a bucket in accordance with the present invention.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to FIGS. 1 and 2, a lever-type mop 10 and a bucket 20 in accordance with the present invention are operated in coordination.

With reference to FIG. 2, the lever-type mop 10 comprises a base 11, a cleaning unit 12, a connecting seat 13 and a rod 14.

The base 11 has a pivoting recess 111 and two notches 112. The pivoting recess 111 is formed on a top surface of the base 11. The notches 112 are formed separately on the top surface of the base 11 and are respectively formed adjacent to opposite side edges of the base 11. In a preferred embodiment, the pivoting recess 111 and the notches 112 are aligned with each other.

The cleaning unit 12 is attached securely on a bottom surface of the base 11 and is made by materials that can absorb water for cleaning, such as, but not limited to, cotton strips, sponges, absorbent fibers and so on.

The connecting seat 13 is mounted pivotally on the top surface of the base 11 and has a pivoting hole 131, a pivoting stem 132 and at least one connecting hole 133. The pivoting hole 131 is formed through the connecting seat 13. The pivoting stem 132 is mounted pivotally through the pivoting hole 131 of the connecting seat 13 and is mounted pivotally in the pivoting recess 111 of the base 11 to connect the connecting seat 13 and the base 11 pivotally. The at least one connecting hole 133 is formed through the connecting seat 13. In a preferred embodiment, the connecting seat 13 is U-shaped and has a bottom wall and two sidewalls. Preferably, the connecting seat 13 has two connecting holes 133. The pivoting hole 131 is formed through the bottom wall. The connecting holes 133 are formed respectively through the sidewalls and align with each other.

The rod 14 is connected pivotally to the connecting seat 13 and has a rod body 141, a pivoting shaft 142 and a limiting protrusion 143. The pivoting shaft 142 is formed transversely on an end of the rod body 141 and is connected pivotally to the connecting seat 13. The limiting protrusion 143 protrudes on the rod body 141 and selectively engages the notches 112 of the base 11.

The pivoting shaft 142 and the connecting seat 13 can be connected pivotally to each other by various structures. In one preferred embodiment shown in FIG. 2, the pivoting shaft 142 has two threaded parts 1421 respectively formed on two ends of the pivoting shaft 142. The threaded parts 1421 are

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mounted respectively through the connecting holes **133** of the connecting seat **13**. Two nuts **1422** are respectively screwed onto the threaded parts **1421** to hold the pivoting shaft **142** in position. In another preferred embodiment shown in FIG. 3, the pivoting shaft **142A** of the rod **14A** has a shaft hole **1421A** formed therethrough. A bolt **1422A** is mounted through the connecting holes **133A** and the shaft hole **1421A**. A nut **1423A** is screwed onto the bolt **1422A** to hold the pivoting shaft **142A** in position.

With the connecting seat **13** connecting pivotally with the base **11** and with the rod **14**, the rod **14** can axially and radially pivot relative to the cleaning unit **12** so that the cleaning unit **12** can clean up different places such as corners, chinks, bottoms of the furniture and so on.

With reference to FIGS. 1 and 4, the bucket **20** comprises a bucket body **200** and a straining board **23**. The bucket body **200** has a cavity **201**, a recess **21**, a step **22** and an inclined surface **24**. The cavity **201** is formed in the bucket body **200**. The recess **21** is formed on an outside wall of the bucket body **200** near a bottom of the bucket body **200**. The step **22** is formed in the cavity **201** and corresponds to the recess **21** and has multiple elongated protrusions formed thereon for user to scrub the cleaning unit **12** of the mop **10**. The inclined surface **24** is formed on a top edge of the bucket body **200**. The straining board **23** is mounted on the top edge of the bucket body **200** and is mounted under the inclined surface **24**. The straining board **23** has multiple straining holes **231** formed therethrough.

After the mop **10** is soaked by water for cleaning the environment, the dirty cleaning unit **12** is scrubbed on the step **22** to get cleaned.

With reference to FIGS. 5 to 8, then the base **11** and the cleaning unit **12** are put on the straining board **23**, and the rod **14** is pivoted downward. The user may step in the recess **21** of the bucket body **200** to keep the bucket body **200** from tipping over. When the rod **14** is pivoted downward, the limiting protrusion **143** engages one of the notches **112** and the top edge of the base **11** abuts against the inclined surface **24** of the bucket body **200** so that the base **11** and the cleaning unit **12** are clamped by the inclined surface **24** and the straining board **23** to squeeze out the water in the cleaning unit **12**. When the cleaning unit **12** is squeezed for a while, the rod **14** is released and the base **11** is rotated for 180 degrees. Then the rod **14** is pivoted downward again and the limiting protrusion **143** engages the other one of the notches **112** such that the cleaning unit **12** is squeezed from the opposite side to thoroughly strain the cleaning unit **12**.

Therefore, the mop **10** and the bucket **20** as described simply use the cooperation of the base **11**, the straining board **23** and the inclined surface **24** to strain the cleaning unit **12** without touching the cleaning unit **12** by user's hand. The simple structures of the mop **10** and the bucket **20** as described are easily made and the manufacturing cost is thus lowered. Moreover, the mop **10** and the bucket **20** as described only bear the user's force that pivots the rod **14** downward so are not damaged easily. Thus, the lifespan of the mop **10** and the bucket **20** as described are elongated.

With further reference to FIG. 9, the inclined surface **24A** of the bucket **20A** may have multiple ribs **241A** formed on an inside wall of the inclined surface **24A**, disposed between the

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inclined surface **24A** and the straining board **23A**, and arranged separately along a protruding direction of the inclined surface **24A** from the top edge of the bucket body **200A** to respectively abut the cleaning units **12** with different thicknesses.

With further reference to FIG. 10, the bucket **20B** may have a handle **25B** mounted pivotally on the outside wall of the bucket body **200B** to allow the user to easily lift the bucket **20B**. The straining board **23B** may be hung on the top edge of the bucket body **200B**.

Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and features of the invention, the disclosure is illustrative only. Changes may be made in the details, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A bucket comprising:

a bucket body having

a cavity formed in the bucket body; and

an inclined surface formed on a top edge of the bucket body;

a straining board mounted on the top edge of the bucket body, mounted under the inclined surface, and having multiple straining holes formed through the straining board; and

wherein the inclined surface of the bucket body has multiple ribs formed on the inclined surface, disposed between the inclined surface and the straining board, and arranged separately along a protruding direction of the inclined surface from the top edge of the bucket body.

2. The bucket as claimed in claim 1, wherein the bucket body has a recess formed on an outside wall of the bucket body near a bottom of the bucket body.

3. The bucket as claimed in claim 2 further comprising a handle mounted pivotally on the outside wall of the bucket body.

4. The bucket as claimed in claim 2, wherein the straining board is hung on the top edge of the bucket body.

5. The bucket as claimed in claim 1, wherein the bucket body has a step formed in the cavity and has multiple elongated protrusions formed on the step.

6. The bucket as claimed in claim 5 further comprising a handle mounted pivotally on an outside wall of the bucket body.

7. The bucket as claimed in claim 5, wherein the straining board is hung on the top edge of the bucket body.

8. The bucket as claimed in claim 1 further comprising a handle mounted pivotally on an outside wall of the bucket body.

9. The bucket as claimed in claim 1, wherein the straining board is hung on the top edge of the bucket body.

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